SEQUENCE LISTING

<110> MCCARTHY, Sean A
FRASER, Christopher C
SHARP, John D
BARNES, Thomas S
KIRST, Susan J
MYERS, Paul S
WRIGHTON, Nicholas
GOODEARL, Andrew
HOLTZMAN, Douglas A
KHODADOUST, Mehran M

<120> NOVEL GENES ENCODING PROTEINS HAVING PROGNOSTIC, DIAGNOSTIC, PREVENTIVE, THERAPEUTIC, AND OTHER USES

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<151> 1999-06-14

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gaagcaatac agccctttgc atttaaagga cttgccaatc tggaatacct cctcctgaaa 780
aattcaagaa ttaggaatgt tactagggat gggtttagtg gaattaataa tcttaaacat 840
ttgatcttaa gtcataatga tttagagaat ttaaattctg acacattcag tttgttaaag 900
aatttaattt accttaagtt agatagaaac agaataatta gcattgataa tgatacattt 960
gaaaatatgg gagcatcttt gaagatcctt aatctgtcat ttaataatct tacagccttg 1020
catccaaggg tccttaagcc gttgtcttca ttgattcatc ttcaggcaaa ttctaatcct 1080
tgggaatgta actgcaaact tttgggcctt cgagactggc tagcatcttc agccattact 1140
ctaaacatct attgtcagaa tcccccatcc atgcgtggca gagcattacg ttatattaac 1200
attacaaatt gtgttacatc ttcaataaat gtatccagag cttgggctgt tgtaaaatct 1260

cctcatattc atcacaagac tactgcgcta atgatggcct ggcataaagt aaccacaaat 1320
ggcagtcctc tggaaaatac tgagactgag aacattactt tctgggaacg aattcctact 1380
tcacctgctg gtagattttt tcaagagaat gcctttggta atccattaga gactacagca 1440
gtgttacctg tgcaaataca acttactact tctgttacct tgaacttgga aaaaaacagt 1500
gctctaccga atgatgctgc ttcaatgtca gggaaaacat ctctaatttg tacacaagaa 1560
gttgagaagt tgaatgaggc ttttgacatt ttgctagctt ttttcatctt agcttgtgtt 1620
ttaatcattt ttttgatcta caaagttgtt cagtttaaac aaaaactaaa ggcatcagaa 1680
aactcaaggg aaaatagact tgaatactac agcttttatc agtcagcaag gtataatgta 1740
actgcctcaa tttgtaacac ttccccaaat tctctagaaa gtcctggctt ggagcagatt 1800
cgacttcata aacaaattgt tcctgaaaat gaggcacagg tcattctttt tgaacattct 1860
gcttta 1866

<210> 23
<211> 622
<212> PRT
<213> Homo sapiens

<400> 23
Met Cys Gly Leu Gln Phe Ser Leu Pro Cys Leu Arg Leu Phe Leu Val
1 5 10 15

Val Thr Cys Tyr Leu Leu Leu Leu Leu His Lys Glu Ile Leu Gly Cys
20 25 30

Ser Ser Val Cys Gln Leu Cys Thr Gly Arg Gln Ile Asn Cys Arg Asn
35 40 45

Leu Gly Leu Ser Ser Ile Pro Lys Asn Phe Pro Glu Ser Thr Val Phe
50 55 60

Leu Tyr Leu Thr Gly Asn Asn Ile Ser Tyr Ile Asn Glu Ser Glu Leu
65 70 75 80

Thr Gly Leu His Ser Leu Val Ala Leu Tyr Leu Asp Asn Ser Asn Ile
85 90 95

Leu Tyr Val Tyr Pro Lys Ala Phe Val Gln Leu Arg His Leu Tyr Phe
100 105 110

Leu Phe Leu Asn Asn Asn Phe Ile Lys Arg Leu Asp Pro Gly Ile Phe
115 120 125

Lys Gly Leu Leu Asn Leu Arg Asn Leu Tyr Leu Gln Tyr Asn Gln Val
130 135 140

Ser Phe Val Pro Arg Gly Val Phe Asn Asp Leu Val Ser Val Gln Tyr
145 150 155 160

Leu Asn Leu Gln Arg Asn Arg Leu Thr Val Leu Gly Ser Gly Thr Phe
165 170 175

Val Gly Met Val Ala Leu Arg Ile Leu Asp Leu Ser Asn Asn Asn Ile
180 185 190

Leu Arg Ile Ser Glu Ser Gly Phe Gln His Leu Glu Asn Leu Ala Cys
195 200 205

Leu Tyr Leu Gly Ser Asn Asn Leu Thr Lys Val Pro Ser Asn Ala Phe
210 215 220

Glu Val Leu Lys Ser Leu Arg Arg Leu Ser Leu Ser His Asn Pro Ile
225 230 235 240

Glu Ala Ile Gln Pro Phe Ala Phe Lys Gly Leu Ala Asn Leu Glu Tyr
245 250 255

Leu Leu Leu Lys Asn Ser Arg Ile Arg Asn Val Thr Arg Asp Gly Phe
260 265 270

Ser Gly Ile Asn Asn Leu Lys His Leu Ile Leu Ser His Asn Asp Leu
275 280 285

Glu Asn Leu Asn Ser Asp Thr Phe Ser Leu Leu Lys Asn Leu Ile Tyr
290 295 300

Leu Lys Leu Asp Arg Asn Arg Ile Ile Ser Ile Asp Asn Asp Thr Phe
305 310 315 320

Glu Asn Met Gly Ala Ser Leu Lys Ile Leu Asn Leu Ser Phe Asn Asn
325 330 335

Leu Thr Ala Leu His Pro Arg Val Leu Lys Pro Leu Ser Ser Leu Ile
340 345 350

His Leu Gln Ala Asn Ser Asn Pro Trp Glu Cys Asn Cys Lys Leu Leu
355 360 365

Gly Leu Arg Asp Trp Leu Ala Ser Ser Ala Ile Thr Leu Asn Ile Tyr
370 375 380

Cys Gln Asn Pro Pro Ser Met Arg Gly Arg Ala Leu Arg Tyr Ile Asn
385 390 395 400

Ile Thr Asn Cys Val Thr Ser Ser Ile Asn Val Ser Arg Ala Trp Ala
405 410 415

Val Val Lys Ser Pro His Ile His His Lys Thr Thr Ala Leu Met Met
420 425 430

Ala Trp His Lys Val Thr Thr Asn Gly Ser Pro Leu Glu Asn Thr Glu
435 440 445

Thr Glu Asn Ile Thr Phe Trp Glu Arg Ile Pro Thr Ser Pro Ala Gly
450 455 460

Arg Phe Phe Gln Glu Asn Ala Phe Gly Asn Pro Leu Glu Thr Thr Ala
465 470 475 480

Val Leu Pro Val Gln Ile Gln Leu Thr Thr Ser Val Thr Leu Asn Leu
485 490 495

Glu Lys Asn Ser Ala Leu Pro Asn Asp Ala Ala Ser Met Ser Gly Lys
500 505 510

Thr Ser Leu Ile Cys Thr Gln Glu Val Glu Lys Leu Asn Glu Ala Phe
515 520 525

Asp Ile Leu Leu Ala Phe Phe Ile Leu Ala Cys Val Leu Ile Ile Phe
530 535 540

Leu Ile Tyr Lys Val Val Gln Phe Lys Gln Lys Leu Lys Ala Ser Glu
545 550 555 560

Asn Ser Arg Glu Asn Arg Leu Glu Tyr Tyr Ser Phe Tyr Gln Ser Ala
565 570 575

Arg Tyr Asn Val Thr Ala Ser Ile Cys Asn Thr Ser Pro Asn Ser Leu
580 585 590

Glu Ser Pro Gly Leu Glu Gln Ile Arg Leu His Lys Gln Ile Val Pro
595 600 605

Glu Asn Glu Ala Gln Val Ile Leu Phe Glu His Ser Ala Leu
610 615 620

<210> 24
<211> 31
<212> PRT
<213> Homo sapiens

<400> 24
Met Cys Gly Leu Gln Phe Ser Leu Pro Cys Leu Arg Leu Phe Leu Val

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  1               5                  10                  15

Val Thr Cys Tyr Leu Leu Leu Leu His Lys Glu Ile Leu Gly
             20                  25                  30
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<210> 25
<211> 591
<212> PRT
<213> Homo sapiens

<400> 25

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Cys Ser Ser Val Cys Gln Leu Cys Thr Gly Arg Gln Ile Asn Cys Arg
  1               5                  10                  15

Asn Leu Gly Leu Ser Ser Ile Pro Lys Asn Phe Pro Glu Ser Thr Val
             20                  25                  30

Phe Leu Tyr Leu Thr Gly Asn Asn Ile Ser Tyr Ile Asn Glu Ser Glu
         35                  40                  45

Leu Thr Gly Leu His Ser Leu Val Ala Leu Tyr Leu Asp Asn Ser Asn
     50                  55                  60

Ile Leu Tyr Val Tyr Pro Lys Ala Phe Val Gln Leu Arg His Leu Tyr
 65                  70                  75                  80

Phe Leu Phe Leu Asn Asn Asn Phe Ile Lys Arg Leu Asp Pro Gly Ile
                 85                  90                  95

Phe Lys Gly Leu Leu Asn Leu Arg Asn Leu Tyr Leu Gln Tyr Asn Gln
            100                 105                 110

Val Ser Phe Val Pro Arg Gly Val Phe Asn Asp Leu Val Ser Val Gln
        115                 120                 125

Tyr Leu Asn Leu Gln Arg Asn Arg Leu Thr Val Leu Gly Ser Gly Thr
    130                 135                 140

Phe Val Gly Met Val Ala Leu Arg Ile Leu Asp Leu Ser Asn Asn Asn
145                 150                 155                 160

Ile Leu Arg Ile Ser Glu Ser Gly Phe Gln His Leu Glu Asn Leu Ala
                165                 170                 175

Cys Leu Tyr Leu Gly Ser Asn Asn Leu Thr Lys Val Pro Ser Asn Ala
            180                 185                 190
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Phe Glu Val Leu Lys Ser Leu Arg Arg Leu Ser Leu Ser His Asn Pro
195 200 205

Ile Glu Ala Ile Gln Pro Phe Ala Phe Lys Gly Leu Ala Asn Leu Glu
210 215 220

Tyr Leu Leu Leu Lys Asn Ser Arg Ile Arg Asn Val Thr Arg Asp Gly
225 230 235 240

Phe Ser Gly Ile Asn Asn Leu Lys His Leu Ile Leu Ser His Asn Asp
245 250 255

Leu Glu Asn Leu Asn Ser Asp Thr Phe Ser Leu Leu Lys Asn Leu Ile
260 265 270

Tyr Leu Lys Leu Asp Arg Asn Arg Ile Ile Ser Ile Asp Asn Asp Thr
275 280 285

Phe Glu Asn Met Gly Ala Ser Leu Lys Ile Leu Asn Leu Ser Phe Asn
290 295 300

Asn Leu Thr Ala Leu His Pro Arg Val Leu Lys Pro Leu Ser Ser Leu
305 310 315 320

Ile His Leu Gln Ala Asn Ser Asn Pro Trp Glu Cys Asn Cys Lys Leu
325 330 335

Leu Gly Leu Arg Asp Trp Leu Ala Ser Ser Ala Ile Thr Leu Asn Ile
340 345 350

Tyr Cys Gln Asn Pro Pro Ser Met Arg Gly Arg Ala Leu Arg Tyr Ile
355 360 365

Asn Ile Thr Asn Cys Val Thr Ser Ser Ile Asn Val Ser Arg Ala Trp
370 375 380

Ala Val Val Lys Ser Pro His Ile His His Lys Thr Thr Ala Leu Met
385 390 395 400

Met Ala Trp His Lys Val Thr Thr Asn Gly Ser Pro Leu Glu Asn Thr
405 410 415

Glu Thr Glu Asn Ile Thr Phe Trp Glu Arg Ile Pro Thr Ser Pro Ala
420 425 430

Gly Arg Phe Phe Gln Glu Asn Ala Phe Gly Asn Pro Leu Glu Thr Thr
435 440 445

Ala Val Leu Pro Val Gln Ile Gln Leu Thr Thr Ser Val Thr Leu Asn
450 455 460

Leu Glu Lys Asn Ser Ala Leu Pro Asn Asp Ala Ala Ser Met Ser Gly
465 470 475 480

Lys Thr Ser Leu Ile Cys Thr Gln Glu Val Glu Lys Leu Asn Glu Ala
485 490 495

Phe Asp Ile Leu Leu Ala Phe Phe Ile Leu Ala Cys Val Leu Ile Ile
500 505 510

Phe Leu Ile Tyr Lys Val Val Gln Phe Lys Gln Lys Leu Lys Ala Ser
515 520 525

Glu Asn Ser Arg Glu Asn Arg Leu Glu Tyr Tyr Ser Phe Tyr Gln Ser
530 535 540

Ala Arg Tyr Asn Val Thr Ala Ser Ile Cys Asn Thr Ser Pro Asn Ser
545 550 555 560

Leu Glu Ser Pro Gly Leu Glu Gln Ile Arg Leu His Lys Gln Ile Val
565 570 575

Pro Glu Asn Glu Ala Gln Val Ile Leu Phe Glu His Ser Ala Leu
580 585 590

<210> 26
<211> 498
<212> PRT
<213> Homo sapiens

<400> 26
Cys Ser Ser Val Cys Gln Leu Cys Thr Gly Arg Gln Ile Asn Cys Arg
1 5 10 15

Asn Leu Gly Leu Ser Ser Ile Pro Lys Asn Phe Pro Glu Ser Thr Val
20 25 30

Phe Leu Tyr Leu Thr Gly Asn Asn Ile Ser Tyr Ile Asn Glu Ser Glu
35 40 45

Leu Thr Gly Leu His Ser Leu Val Ala Leu Tyr Leu Asp Asn Ser Asn
50 55 60

Ile Leu Tyr Val Tyr Pro Lys Ala Phe Val Gln Leu Arg His Leu Tyr
65 70 75 80

Phe Leu Phe Leu Asn Asn Asn Phe Ile Lys Arg Leu Asp Pro Gly Ile
85 90 95

Phe Lys Gly Leu Leu Asn Leu Arg Asn Leu Tyr Leu Gln Tyr Asn Gln
100 105 110

Val Ser Phe Val Pro Arg Gly Val Phe Asn Asp Leu Val Ser Val Gln
115 120 125

Tyr Leu Asn Leu Gln Arg Asn Arg Leu Thr Val Leu Gly Ser Gly Thr
130 135 140

Phe Val Gly Met Val Ala Leu Arg Ile Leu Asp Leu Ser Asn Asn Asn
145 150 155 160

Ile Leu Arg Ile Ser Glu Ser Gly Phe Gln His Leu Glu Asn Leu Ala
165 170 175

Cys Leu Tyr Leu Gly Ser Asn Asn Leu Thr Lys Val Pro Ser Asn Ala
180 185 190

Phe Glu Val Leu Lys Ser Leu Arg Arg Leu Ser Leu Ser His Asn Pro
195 200 205

Ile Glu Ala Ile Gln Pro Phe Ala Phe Lys Gly Leu Ala Asn Leu Glu
210 215 220

Tyr Leu Leu Leu Lys Asn Ser Arg Ile Arg Asn Val Thr Arg Asp Gly
225 230 235 240

Phe Ser Gly Ile Asn Asn Leu Lys His Leu Ile Leu Ser His Asn Asp
245 250 255

Leu Glu Asn Leu Asn Ser Asp Thr Phe Ser Leu Leu Lys Asn Leu Ile
260 265 270

Tyr Leu Lys Leu Asp Arg Asn Arg Ile Ile Ser Ile Asp Asn Asp Thr
275 280 285

Phe Glu Asn Met Gly Ala Ser Leu Lys Ile Leu Asn Leu Ser Phe Asn
290 295 300

Asn Leu Thr Ala Leu His Pro Arg Val Leu Lys Pro Leu Ser Ser Leu
305 310 315 320

Ile His Leu Gln Ala Asn Ser Asn Pro Trp Glu Cys Asn Cys Lys Leu
325 330 335

Leu Gly Leu Arg Asp Trp Leu Ala Ser Ser Ala Ile Thr Leu Asn Ile
340 345 350

Tyr Cys Gln Asn Pro Pro Ser Met Arg Gly Arg Ala Leu Arg Tyr Ile
355 360 365

Asn Ile Thr Asn Cys Val Thr Ser Ser Ile Asn Val Ser Arg Ala Trp
370 375 380

Ala Val Val Lys Ser Pro His Ile His His Lys Thr Thr Ala Leu Met
385 390 395 400

Met Ala Trp His Lys Val Thr Thr Asn Gly Ser Pro Leu Glu Asn Thr
405 410 415

Glu Thr Glu Asn Ile Thr Phe Trp Glu Arg Ile Pro Thr Ser Pro Ala
420 425 430

Gly Arg Phe Phe Gln Glu Asn Ala Phe Gly Asn Pro Leu Glu Thr Thr
435 440 445

Ala Val Leu Pro Val Gln Ile Gln Leu Thr Thr Ser Val Thr Leu Asn
450 455 460

Leu Glu Lys Asn Ser Ala Leu Pro Asn Asp Ala Ala Ser Met Ser Gly
465 470 475 480

Lys Thr Ser Leu Ile Cys Thr Gln Glu Val Glu Lys Leu Asn Glu Ala
485 490 495

Phe Asp

<210> 27
<211> 18
<212> PRT
<213> Homo sapiens

<400> 27
Ile Leu Leu Ala Phe Phe Ile Leu Ala Cys Val Leu Ile Ile Phe Leu
1 5 10 15

Ile Tyr

<210> 28
<211> 75
<212> PRT
<213> Homo sapiens

<400> 28

Lys Val Val Gln Phe Lys Gln Lys Leu Lys Ala Ser Glu Asn Ser Arg
1 5 10 15

Glu Asn Arg Leu Glu Tyr Tyr Ser Phe Tyr Gln Ser Ala Arg Tyr Asn
20 25 30

Val Thr Ala Ser Ile Cys Asn Thr Ser Pro Asn Ser Leu Glu Ser Pro
35 40 45

Gly Leu Glu Gln Ile Arg Leu His Lys Gln Ile Val Pro Glu Asn Glu
50 55 60

Ala Gln Val Ile Leu Phe Glu His Ser Ala Leu
65 70 75

<210> 29
<211> 1529
<212> PRT
<213> Homo sapiens

<400> 29

Met Arg Gly Val Gly Trp Gln Met Leu Ser Leu Ser Leu Gly Leu Val
1 5 10 15

Leu Ala Ile Leu Asn Lys Val Ala Pro Gln Ala Cys Pro Ala Gln Cys
20 25 30

Ser Cys Ser Gly Ser Thr Val Asp Cys His Gly Leu Ala Leu Arg Ser
35 40 45

Val Pro Arg Asn Ile Pro Arg Asn Thr Glu Arg Leu Asp Leu Asn Gly
50 55 60

Asn Asn Ile Thr Arg Ile Thr Lys Thr Asp Phe Ala Gly Leu Arg His
65 70 75 80

Leu Arg Val Leu Gln Leu Met Glu Asn Lys Ile Ser Thr Ile Glu Arg
85 90 95

Gly Ala Phe Gln Asp Leu Lys Glu Leu Glu Arg Leu Arg Leu Asn Arg
100 105 110

Asn His Leu Gln Leu Phe Pro Glu Leu Leu Phe Leu Gly Thr Ala Lys
115 120 125

Leu Tyr Arg Leu Asp Leu Ser Glu Asn Gln Ile Gln Ala Ile Pro Arg
130 135 140

Lys Ala Phe Arg Gly Ala Val Asp Ile Lys Asn Leu Gln Leu Asp Tyr
145 150 155 160

Asn Gln Ile Ser Cys Ile Glu Asp Gly Ala Phe Arg Ala Leu Arg Asp
165 170 175

Leu Glu Val Leu Thr Leu Asn Asn Asn Asn Ile Thr Arg Leu Ser Val
180 185 190

Ala Ser Phe Asn His Met Pro Lys Leu Arg Thr Phe Arg Leu His Ser
195 200 205

Asn Asn Leu Tyr Cys Asp Cys His Leu Ala Trp Leu Ser Asp Trp Leu
210 215 220

Arg Gln Arg Pro Arg Val Gly Leu Tyr Thr Gln Cys Met Gly Pro Ser
225 230 235 240

His Leu Arg Gly His Asn Val Ala Glu Val Gln Lys Arg Glu Phe Val
245 250 255

Cys Ser Gly His Gln Ser Phe Met Ala Pro Ser Cys Ser Val Leu His
260 265 270

Cys Pro Ala Ala Cys Thr Cys Ser Asn Asn Ile Val Asp Cys Arg Gly
275 280 285

Lys Gly Leu Thr Glu Ile Pro Thr Asn Leu Pro Glu Thr Ile Thr Glu
290 295 300

Ile Arg Leu Glu Gln Asn Thr Ile Lys Val Ile Pro Pro Gly Ala Phe
305 310 315 320

Ser Pro Tyr Lys Lys Leu Arg Arg Ile Asp Leu Ser Asn Asn Gln Ile
325 330 335

Ser Glu Leu Ala Pro Asp Ala Phe Gln Gly Leu Arg Ser Leu Asn Ser
340 345 350

Leu Val Leu Tyr Gly Asn Lys Ile Thr Glu Leu Pro Lys Ser Leu Phe
355 360 365

Glu Gly Leu Phe Ser Leu Gln Leu Leu Leu Leu Asn Ala Asn Lys Ile
370 375 380

Asn Cys Leu Arg Val Asp Ala Phe Gln Asp Leu His Asn Leu Asn Leu
385 390 395 400

Leu Ser Leu Tyr Asp Asn Lys Leu Gln Thr Ile Ala Lys Gly Thr Phe
405 410 415

Ser Pro Leu Arg Ala Ile Gln Thr Met His Leu Ala Gln Asn Pro Phe
420 425 430

Ile Cys Asp Cys His Leu Lys Trp Leu Ala Asp Tyr Leu His Thr Asn
435 440 445

Pro Ile Glu Thr Ser Gly Ala Arg Cys Thr Ser Pro Arg Arg Leu Ala
450 455 460

Asn Lys Arg Ile Gly Gln Ile Lys Ser Lys Lys Phe Arg Cys Ser Ala
465 470 475 480

Lys Glu Gln Tyr Phe Ile Pro Gly Thr Glu Asp Tyr Arg Ser Lys Leu
485 490 495

Ser Gly Asp Cys Phe Ala Asp Leu Ala Cys Pro Glu Lys Cys Arg Cys
500 505 510

Glu Gly Thr Thr Val Asp Cys Ser Asn Gln Lys Leu Asn Lys Ile Pro
515 520 525

Glu His Ile Pro Gln Tyr Thr Ala Glu Leu Arg Leu Asn Asn Asn Glu
530 535 540

Phe Thr Val Leu Glu Ala Thr Gly Ile Phe Lys Lys Leu Pro Gln Leu
545 550 555 560

Arg Lys Ile Asn Phe Ser Asn Asn Lys Ile Thr Asp Ile Glu Glu Gly
565 570 575

Ala Phe Glu Gly Ala Ser Gly Val Asn Glu Ile Leu Leu Thr Ser Asn
580 585 590

Arg Leu Glu Asn Val Gln His Lys Met Phe Lys Gly Leu Glu Ser Leu
595 600 605

Lys Thr Leu Met Leu Arg Ser Asn Arg Ile Thr Cys Val Gly Asn Asp
610 615 620

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Ser Phe Ile Gly Leu Ser Ser Val Arg Leu Leu Ser Leu Tyr Asp Asn
625                 630                 635                 640

Gln Ile Thr Thr Val Ala Pro Gly Ala Phe Asp Thr Leu His Ser Leu
                645                 650                 655

Ser Thr Leu Asn Leu Leu Ala Asn Pro Phe Asn Cys Asn Cys Tyr Leu
            660                 665                 670

Ala Trp Leu Gly Glu Trp Leu Arg Lys Lys Arg Ile Val Thr Gly Asn
        675                 680                 685

Pro Arg Cys Gln Lys Pro Tyr Phe Leu Lys Glu Ile Pro Ile Gln Asp
    690                 695                 700

Val Ala Ile Gln Asp Phe Thr Cys Asp Asp Gly Asn Asp Asp Asn Ser
705                 710                 715                 720

Cys Ser Pro Leu Ser Arg Cys Pro Thr Glu Cys Thr Cys Leu Asp Thr
                725                 730                 735

Val Val Arg Cys Ser Asn Lys Gly Leu Lys Val Leu Pro Lys Gly Ile
            740                 745                 750

Pro Arg Asp Val Thr Glu Leu Tyr Leu Asp Gly Asn Gln Phe Thr Leu
        755                 760                 765

Val Pro Lys Glu Leu Ser Asn Tyr Lys His Leu Thr Leu Ile Asp Leu
    770                 775                 780

Ser Asn Asn Arg Ile Ser Thr Leu Ser Asn Gln Ser Phe Ser Asn Met
785                 790                 795                 800

Thr Gln Leu Leu Thr Leu Ile Leu Ser Tyr Asn Arg Leu Arg Cys Ile
                805                 810                 815

Pro Pro Arg Thr Phe Asp Gly Leu Lys Ser Leu Arg Leu Leu Ser Leu
            820                 825                 830

His Gly Asn Asp Ile Ser Val Val Pro Glu Gly Ala Phe Asn Asp Leu
        835                 840                 845

Ser Ala Leu Ser His Leu Ala Ile Gly Ala Asn Pro Leu Tyr Cys Asp
    850                 855                 860

Cys Asn Met Gln Trp Leu Ser Asp Trp Val Lys Ser Glu Tyr Lys Glu
865                 870                 875                 880
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Pro Gly Ile Ala Arg Cys Ala Gly Pro Gly Glu Met Ala Asp Lys Leu
885 890 895

Leu Leu Thr Thr Pro Ser Lys Lys Phe Thr Cys Gln Gly Pro Val Asp
900 905 910

Val Asn Ile Leu Ala Lys Cys Asn Pro Cys Leu Ser Asn Pro Cys Lys
915 920 925

Asn Asp Gly Thr Cys Asn Ser Asp Pro Val Asp Phe Tyr Arg Cys Thr
930 935 940

Cys Pro Tyr Gly Phe Lys Gly Gln Asp Cys Asp Val Pro Ile His Ala
945 950 955 960

Cys Ile Ser Asn Pro Cys Lys His Gly Gly Thr Cys His Leu Lys Glu
965 970 975

Gly Glu Glu Asp Gly Phe Trp Cys Ile Cys Ala Asp Gly Phe Glu Gly
980 985 990

Glu Asn Cys Glu Val Asn Val Asp Asp Cys Glu Asp Asn Asp Cys Glu
995 1000 1005

Asn Asn Ser Thr Cys Val Asp Gly Ile Asn Asn Tyr Thr Cys Leu Cys
1010 1015 1020

Pro Pro Glu Tyr Thr Gly Glu Leu Cys Glu Glu Lys Leu Asp Phe Cys
1025 1030 1035 1040

Ala Gln Asp Leu Asn Pro Cys Gln His Asp Ser Lys Cys Ile Leu Thr
1045 1050 1055

Pro Lys Gly Phe Lys Cys Asp Cys Thr Pro Gly Tyr Val Gly Glu His
1060 1065 1070

Cys Asp Ile Asp Phe Asp Asp Cys Gln Asp Asn Lys Cys Lys Asn Gly
1075 1080 1085

Ala His Cys Thr Asp Ala Val Asn Gly Tyr Thr Cys Ile Cys Pro Glu
1090 1095 1100

Gly Tyr Ser Gly Leu Phe Cys Glu Phe Ser Pro Pro Met Val Leu Pro
1105 1110 1115 1120

Arg Thr Ser Pro Cys Asp Asn Phe Asp Cys Gln Asn Gly Ala Gln Cys
1125 1130 1135

Ile Val Arg Ile Asn Glu Pro Ile Cys Gln Cys Leu Pro Gly Tyr Gln
1140 1145 1150

Gly Glu Lys Cys Glu Lys Leu Val Ser Val Asn Phe Ile Asn Lys Glu
1155 1160 1165

Ser Tyr Leu Gln Ile Pro Ser Ala Lys Val Arg Pro Gln Thr Asn Ile
1170 1175 1180

Thr Leu Gln Ile Ala Thr Asp Glu Asp Ser Gly Ile Leu Leu Tyr Lys
1185 1190 1195 1200

Gly Asp Lys Asp His Ile Ala Val Glu Leu Tyr Arg Gly Arg Val Arg
1205 1210 1215

Ala Ser Tyr Asp Thr Gly Ser His Pro Ala Ser Ala Ile Tyr Ser Val
1220 1225 1230

Glu Thr Ile Asn Asp Gly Asn Phe His Ile Val Glu Leu Leu Ala Leu
1235 1240 1245

Asp Gln Ser Leu Ser Leu Ser Val Asp Gly Gly Asn Pro Lys Ile Ile
1250 1255 1260

Thr Asn Leu Ser Lys Gln Ser Thr Leu Asn Phe Asp Ser Pro Leu Tyr
1265 1270 1275 1280

Val Gly Gly Met Pro Gly Lys Ser Asn Val Ala Ser Leu Arg Gln Ala
1285 1290 1295

Pro Gly Gln Asn Gly Thr Ser Phe His Gly Cys Ile Arg Asn Leu Tyr
1300 1305 1310

Ile Asn Ser Glu Leu Gln Asp Phe Gln Lys Val Pro Met Gln Thr Gly
1315 1320 1325

Ile Leu Pro Gly Cys Glu Pro Cys His Lys Lys Val Cys Ala His Gly
1330 1335 1340

Thr Cys Gln Pro Ser Ser Gln Ala Gly Phe Thr Cys Glu Cys Gln Glu
1345 1350 1355 1360

Gly Trp Met Gly Pro Leu Cys Asp Gln Arg Thr Asn Asp Pro Cys Leu
1365 1370 1375

Gly Asn Lys Cys Val His Gly Thr Cys Leu Pro Ile Asn Ala Phe Ser
1380 1385 1390

Tyr Ser Cys Lys Cys Leu Glu Gly His Gly Gly Val Leu Cys Asp Glu
1395 1400 1405

Glu Glu Asp Leu Phe Asn Pro Cys Gln Ala Ile Lys Cys Lys His Gly
1410 1415 1420

Lys Cys Arg Leu Ser Gly Leu Gly Gln Pro Tyr Cys Glu Cys Ser Ser
1425 1430 1435 1440

Gly Tyr Thr Gly Asp Ser Cys Asp Arg Glu Ile Ser Cys Arg Gly Glu
1445 1450 1455

Arg Ile Arg Asp Tyr Tyr Gln Lys Gln Gln Gly Tyr Ala Ala Cys Gln
1460 1465 1470

Thr Thr Lys Lys Val Ser Arg Leu Glu Cys Arg Gly Gly Cys Ala Gly
1475 1480 1485

Gly Gln Cys Cys Gly Pro Leu Arg Ser Lys Arg Arg Lys Tyr Ser Phe
1490 1495 1500

Glu Cys Thr Asp Gly Ser Ser Phe Val Asp Glu Val Glu Lys Val Val
1505 1510 1515 1520

Lys Cys Gly Cys Thr Arg Cys Val Ser
1525

<210> 30
<211> 4900
<212> DNA
<213> Homo sapiens

<400> 30
cagagcaggg tggagagggc ggtgggaggc gtgtgcctga gtgggctcta ctgccttgtt 60
ccatattatt ttgtgcacat tttccctggc actctgggtt gctagccccg ccgggcactg 120
ggcctcagac actgcgcggt tccctcggag cagcaagcta aagaaagccc ccagtgccgg 180
cgaggaagga ggcggcgggg aaagatgcgc ggcgttggct ggcagatgct gtccctgtcg 240
ctggggttag tgctggcgat cctgaacaag gtggcaccgc aggcgtgccc ggcgcagtgc 300
tcttgctcgg gcagcacagt ggactgtcac gggctggcgc tgcgcagcgt gcccaggaat 360
atcccccgca acaccgagag actggattta aatggaaata acatcacaag aattacgaag 420
acagattttg ctggtcttag acatctaaga gttcttcagc ttatggagaa taagattagc 480
accattgaaa gaggagcatt ccaggatctt aaagaactag agagactgcg tttaaacaga 540
aatcaccttc agctgtttcc tgagttgctg tttcttggga ctgcgaagct atacaggctt 600
gatctcagtg aaaaccaaat tcaggcaatc ccaaggaaag ctttccgtgg ggcagttgac 660
ataaaaaatt tgcaactgga ttacaaccag atcagctgta ttgaagatgg ggcattcagg 720
gctctccggg acctggaagt gctcactctc aacaataaca acattactag actttctgtg 780

gcaagtttca accatatgcc taaacttagg acttttcgac tgcattcaaa caacctgtat 840
tgtgactgcc acctggcctg gctctccgac tggcttcgcc aaaggcctcg ggttggtctg 900
tacactcagt gtatgggccc ctcccacctg agaggccata atgtagccga ggttcaaaaa 960
cgagaatttg tctgcagtgg tcaccagtca tttatggctc cttcttgtag tgttttgcac 1020
tgccctgccg cctgtacctg tagcaacaat atcgtagact gtcgtgggaa aggtctcact 1080
gagatcccca caaatcttcc agagaccatc acagaaatac gtttggaaca gaacacaatc 1140
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<213> Homo sapiens

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<213> Homo sapiens

<400> 32

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<212> PRT
<213> Homo sapiens

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Glu Leu Glu Thr Ser Asp Val Val Thr Val Val Leu Gly Gln Asp Ala
35 40 45

Lys Leu Pro Cys Phe Tyr Arg Gly Asp Ser Gly Glu Gln Val Gly Gln
50 55 60

Val Ala Trp Ala Arg Val Asp Ala Gly Glu Gly Ala Gln Glu Leu Ala
65 70 75 80

Leu Leu His Ser Lys Tyr Gly Leu His Val Ser Pro Ala Tyr Glu Gly
85 90 95

Arg Val Glu Gln Pro Pro Pro Pro Arg Asn Pro Leu Asp Gly Ser Val
100 105 110

Leu Leu Arg Asn Ala Val Gln Ala Asp Glu Gly Glu Tyr Glu Cys Arg
115 120 125

Val Ser Thr Phe Pro Ala Gly Ser Phe Gln Ala Arg Leu Arg Leu Arg
130 135 140

Val Leu Val Pro Pro Leu Pro Ser Leu Asn Pro Gly Pro Ala Leu Glu
145 150 155 160

Glu Gly Gln Gly Leu Thr Leu Ala Ala Ser Cys Thr Ala Glu Gly Ser
165 170 175

Pro Ala Pro Ser Val Thr Trp Asp Thr Glu Val Lys Gly Thr Thr Ser
180 185 190

Ser Arg Ser Phe Lys His Ser Arg Ser Ala Ala Val Thr Ser Glu Phe
195 200 205

His Leu Val Pro Ser Arg Ser Met Asn Gly Gln Pro Leu Thr Cys Val
210 215 220

Val Ser His Pro Gly Leu Leu Gln Asp Gln Arg Ile Thr His Ile Leu
225 230 235 240

His Val Ser Phe Leu Ala Glu Ala Ser Val Arg Gly Leu Glu Asp Gln
245 250 255

Asn Leu Trp His Ile Gly Arg Glu Gly Ala Met Leu Lys Cys Leu Ser
260 265 270

Glu Gly Gln Pro Pro Pro Ser Tyr Asn Trp Thr Arg Leu Asp Gly Pro
275 280 285

Leu Pro Ser Gly Val Arg Val Asp Gly Asp Thr Leu Gly Phe Pro Pro
290 295 300

Leu Thr Thr Glu His Ser Gly Ile Tyr Val Cys His Val Ser Asn Glu
305 310 315 320

Phe Ser Ser Arg Asp Ser Gln Val Thr Val Asp Val Leu Asp Pro Gln
325 330 335

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Glu Asp Ser Gly Lys Gln Val Asp Leu Val Ser Ala Ser Val Val Val
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Val Gly Val Ile Ala Ala Leu Leu Phe Cys Leu Leu Val Val Val Val
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Val Leu Met Ser Arg Tyr His Arg Arg Lys Ala Gln Gln Met Thr Gln
    370                 375                 380

Lys Tyr Glu Glu Glu Leu Thr Leu Thr Arg Glu Asn Ser Ile Arg Arg
385                 390                 395                 400

Leu His Ser His His Thr Asp Pro Arg Ser Gln Pro Glu Glu Ser Val
                405                 410                 415

Gly Leu Arg Ala Glu Gly His Pro Asp Ser Leu Lys Asp Asn Ser Ser
            420                 425                 430

Cys Ser Val Met Ser Glu Glu Pro Glu Gly Arg Ser Tyr Ser Thr Leu
        435                 440                 445

Thr Thr Val Arg Glu Ile Glu Thr Gln Thr Glu Leu Leu Ser Pro Gly
    450                 455                 460

Ser Gly Arg Ala Glu Glu Glu Glu Asp Gln Asp Glu Gly Ile Lys Gln
465                 470                 475                 480

Ala Met Asn His Phe Val Gln Glu Asn Gly Thr Leu Arg Ala Lys Pro
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Thr Gly Asn Gly Ile Tyr Ile Asn Gly Arg Gly His Leu Val
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<211> 31
<212> PRT
<213> Homo sapiens

<400> 34

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<211> 479
<212> PRT
<213> Homo sapiens

<400> 35
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Ala Lys Leu Pro Cys Phe Tyr Arg Gly Asp Ser Gly Glu Gln Val Gly
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Gln Val Ala Trp Ala Arg Val Asp Ala Gly Glu Gly Ala Gln Glu Leu
35 40 45

Ala Leu Leu His Ser Lys Tyr Gly Leu His Val Ser Pro Ala Tyr Glu
50 55 60

Gly Arg Val Glu Gln Pro Pro Pro Pro Arg Asn Pro Leu Asp Gly Ser
65 70 75 80

Val Leu Leu Arg Asn Ala Val Gln Ala Asp Glu Gly Glu Tyr Glu Cys
85 90 95

Arg Val Ser Thr Phe Pro Ala Gly Ser Phe Gln Ala Arg Leu Arg Leu
100 105 110

Arg Val Leu Val Pro Pro Leu Pro Ser Leu Asn Pro Gly Pro Ala Leu
115 120 125

Glu Glu Gly Gln Gly Leu Thr Leu Ala Ala Ser Cys Thr Ala Glu Gly
130 135 140

Ser Pro Ala Pro Ser Val Thr Trp Asp Thr Glu Val Lys Gly Thr Thr
145 150 155 160

Ser Ser Arg Ser Phe Lys His Ser Arg Ser Ala Ala Val Thr Ser Glu
165 170 175

Phe His Leu Val Pro Ser Arg Ser Met Asn Gly Gln Pro Leu Thr Cys
180 185 190

Val Val Ser His Pro Gly Leu Leu Gln Asp Gln Arg Ile Thr His Ile
195 200 205

Leu His Val Ser Phe Leu Ala Glu Ala Ser Val Arg Gly Leu Glu Asp
210 215 220

Gln Asn Leu Trp His Ile Gly Arg Glu Gly Ala Met Leu Lys Cys Leu
225 230 235 240

Ser Glu Gly Gln Pro Pro Pro Ser Tyr Asn Trp Thr Arg Leu Asp Gly
245 250 255

Pro Leu Pro Ser Gly Val Arg Val Asp Gly Asp Thr Leu Gly Phe Pro
260 265 270

Pro Leu Thr Thr Glu His Ser Gly Ile Tyr Val Cys His Val Ser Asn
275 280 285

Glu Phe Ser Ser Arg Asp Ser Gln Val Thr Val Asp Val Leu Asp Pro
290 295 300

Gln Glu Asp Ser Gly Lys Gln Val Asp Leu Val Ser Ala Ser Val Val
305 310 315 320

Val Val Gly Val Ile Ala Ala Leu Leu Phe Cys Leu Leu Val Val Val
325 330 335

Val Val Leu Met Ser Arg Tyr His Arg Arg Lys Ala Gln Gln Met Thr
340 345 350

Gln Lys Tyr Glu Glu Glu Leu Thr Leu Thr Arg Glu Asn Ser Ile Arg
355 360 365

Arg Leu His Ser His His Thr Asp Pro Arg Ser Gln Pro Glu Glu Ser
370 375 380

Val Gly Leu Arg Ala Glu Gly His Pro Asp Ser Leu Lys Asp Asn Ser
385 390 395 400

Ser Cys Ser Val Met Ser Glu Glu Pro Glu Gly Arg Ser Tyr Ser Thr
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Leu Thr Thr Val Arg Glu Ile Glu Thr Gln Thr Glu Leu Leu Ser Pro
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Gly Ser Gly Arg Ala Glu Glu Glu Glu Asp Gln Asp Glu Gly Ile Lys
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Gln Ala Met Asn His Phe Val Gln Glu Asn Gly Thr Leu Arg Ala Lys
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<211> 314
<212> PRT
<213> Homo sapiens

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Ala Lys Leu Pro Cys Phe Tyr Arg Gly Asp Ser Gly Glu Gln Val Gly
20 25 30

Gln Val Ala Trp Ala Arg Val Asp Ala Gly Glu Gly Ala Gln Glu Leu
35 40 45

Ala Leu Leu His Ser Lys Tyr Gly Leu His Val Ser Pro Ala Tyr Glu
50 55 60

Gly Arg Val Glu Gln Pro Pro Pro Pro Arg Asn Pro Leu Asp Gly Ser
65 70 75 80

Val Leu Leu Arg Asn Ala Val Gln Ala Asp Glu Gly Glu Tyr Glu Cys
85 90 95

Arg Val Ser Thr Phe Pro Ala Gly Ser Phe Gln Ala Arg Leu Arg Leu
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Arg Val Leu Val Pro Pro Leu Pro Ser Leu Asn Pro Gly Pro Ala Leu
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Glu Glu Gly Gln Gly Leu Thr Leu Ala Ala Ser Cys Thr Ala Glu Gly
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Ser Pro Ala Pro Ser Val Thr Trp Asp Thr Glu Val Lys Gly Thr Thr
145 150 155 160

Ser Ser Arg Ser Phe Lys His Ser Arg Ser Ala Ala Val Thr Ser Glu
165 170 175

Phe His Leu Val Pro Ser Arg Ser Met Asn Gly Gln Pro Leu Thr Cys
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Pro Leu Thr Thr Glu His Ser Gly Ile Tyr Val Cys His Val Ser Asn
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Glu Phe Ser Ser Arg Asp Ser Gln Val Thr Val Asp Val Leu Asp Pro
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<210> 37
<211> 25
<212> PRT
<213> Homo sapiens

<400> 37
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Cys Leu Leu Val Val Val Val Val Leu
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<210> 38
<211> 140
<212> PRT
<213> Homo sapiens

<400> 38
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Ser His His Thr Asp Pro Arg Ser Gln Pro Glu Glu Ser Val Gly Leu
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Arg Ala Glu Gly His Pro Asp Ser Leu Lys Asp Asn Ser Ser Cys Ser
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Val Met Ser Glu Glu Pro Glu Gly Arg Ser Tyr Ser Thr Leu Thr Thr
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Val Arg Glu Ile Glu Thr Gln Thr Glu Leu Leu Ser Pro Gly Ser Gly
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Arg Ala Glu Glu Glu Glu Asp Gln Asp Glu Gly Ile Lys Gln Ala Met
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Asn His Phe Val Gln Glu Asn Gly Thr Leu Arg Ala Lys Pro Thr Gly
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Asn Gly Ile Tyr Ile Asn Gly Arg Gly His Leu Val
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<210> 41
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<213> Homo sapiens

<400> 41
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<210> 42
<211> 897
<212> DNA
<213> Homo sapiens

<400> 42
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<210> 43
<211> 299
<212> PRT
<213> Homo sapiens

<400> 43

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Val Thr Ser Glu Phe His Leu Val Pro Ser Arg Ser Met Asn Gly Gln
             20                  25                  30

Pro Leu Thr Cys Val Val Ser His Pro Gly Leu Leu Gln Asp Gln Arg
         35                  40                  45

Ile Thr His Ile Leu His Val Ser Phe Leu Ala Glu Ala Ser Val Arg
     50                  55                  60

Gly Leu Glu Asp Gln Asn Leu Trp His Ile Gly Arg Glu Gly Ala Met
 65                  70                  75                  80

Leu Lys Cys Leu Ser Glu Gly Gln Pro Pro Pro Ser Tyr Asn Trp Thr
                 85                  90                  95

Arg Leu Asp Gly Pro Leu Pro Ser Gly Val Arg Val Asp Gly Asp Thr
            100                 105                 110

Leu Gly Phe Pro Pro Leu Thr Thr Glu His Ser Gly Ile Tyr Val Cys
        115                 120                 125

His Val Ser Asn Glu Phe Ser Ser Arg Asp Ser Gln Val Thr Val Asp
    130                 135                 140

Val Leu Ala Asp Pro Gln Glu Asp Ser Gly Lys Gln Val Asp Leu Val
145                 150                 155                 160

Ser Ala Ser Val Val Val Val Gly Val Ile Ala Ala Leu Leu Phe Cys
                165                 170                 175

Leu Leu Val Val Val Val Val Leu Met Ser Arg Tyr His Arg Arg Lys
            180                 185                 190
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Ala Gln Gln Met Thr Gln Lys Tyr Glu Glu Glu Leu Thr Leu Thr Arg
195 200 205

Glu Asn Ser Ile Arg Arg Leu His Ser His His Thr Asp Pro Arg Ser
210 215 220

Gln Ser Glu Glu Pro Glu Gly Arg Ser Tyr Ser Thr Leu Thr Thr Val
225 230 235 240

Arg Glu Ile Glu Thr Gln Thr Glu Leu Leu Ser Pro Gly Ser Gly Arg
245 250 255

Ala Glu Glu Glu Glu Asp Gln Asp Glu Gly Ile Lys Gln Ala Met Asn
260 265 270

His Phe Val Gln Glu Asn Gly Thr Leu Arg Ala Lys Pro Thr Gly Asn
275 280 285

Gly Ile Tyr Ile Asn Gly Arg Gly His Leu Val
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<210> 50
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<210> 51
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<212> DNA
<213> Homo sapiens

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<210> 52
<211> 627
<212> DNA
<213> Homo sapiens

<400> 52
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<210> 53
<211> 209
<212> PRT
<213> Homo sapiens

<400> 53
Met Met Gln Glu Gln Gln Pro Gln Ser Thr Glu Lys Arg Gly Trp Leu
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Ser Leu Arg Leu Trp Ser Val Ala Gly Ile Ser Ile Ala Leu Leu Ser
20 25 30

Ala Cys Phe Ile Val Ser Cys Val Val Thr Tyr His Phe Thr Tyr Gly
35 40 45

Glu Thr Gly Lys Arg Leu Ser Glu Leu His Ser Tyr His Ser Ser Leu
50 55 60

Thr Cys Phe Ser Glu Gly Thr Lys Val Pro Ala Trp Gly Cys Cys Pro
65 70 75 80

Ala Ser Trp Lys Ser Phe Gly Ser Ser Cys Tyr Phe Ile Ser Ser Glu
85 90 95

Glu Lys Val Trp Ser Lys Ser Glu Gln Asn Cys Val Glu Met Gly Ala
100 105 110

His Leu Val Val Phe Asn Thr Glu Ala Glu Gln Asn Phe Ile Val Gln
115 120 125

Gln Leu Asn Glu Ser Phe Ser Tyr Phe Leu Gly Leu Ser Asp Pro Gln
130 135 140

Gly Asn Asn Asn Trp Gln Trp Ile Asp Lys Thr Pro Tyr Glu Lys Asn
145 150 155 160

Val Arg Phe Trp His Leu Gly Glu Pro Asn His Ser Ala Glu Gln Cys
165 170 175

Ala Ser Ile Val Phe Trp Lys Pro Thr Gly Trp Gly Trp Asn Asp Val
180 185 190

Ile Cys Glu Thr Arg Arg Asn Ser Ile Cys Glu Met Asn Lys Ile Tyr
195 200 205

Leu

<210> 54
<211> 48
<212> PRT
<213> Homo sapiens

<400> 54
Met Met Gln Glu Gln Gln Pro Gln Ser Thr Glu Lys Arg Gly Trp Leu

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  1               5                  10                  15

Ser Leu Arg Leu Trp Ser Val Ala Gly Ile Ser Ile Ala Leu Leu Ser
             20                  25                  30

Ala Cys Phe Ile Val Ser Cys Val Val Thr Tyr His Phe Thr Tyr Gly
         35                  40                  45
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<210> 55
<211> 161
<212> PRT
<213> Homo sapiens

<400> 55

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Glu Thr Gly Lys Arg Leu Ser Glu Leu His Ser Tyr His Ser Ser Leu
  1               5                  10                  15

Thr Cys Phe Ser Glu Gly Thr Lys Val Pro Ala Trp Gly Cys Cys Pro
             20                  25                  30

Ala Ser Trp Lys Ser Phe Gly Ser Ser Cys Tyr Phe Ile Ser Ser Glu
         35                  40                  45

Glu Lys Val Trp Ser Lys Ser Glu Gln Asn Cys Val Glu Met Gly Ala
     50                  55                  60

His Leu Val Val Phe Asn Thr Glu Ala Glu Gln Asn Phe Ile Val Gln
 65                  70                  75                  80

Gln Leu Asn Glu Ser Phe Ser Tyr Phe Leu Gly Leu Ser Asp Pro Gln
                 85                  90                  95

Gly Asn Asn Asn Trp Gln Trp Ile Asp Lys Thr Pro Tyr Glu Lys Asn
            100                 105                 110

Val Arg Phe Trp His Leu Gly Glu Pro Asn His Ser Ala Glu Gln Cys
        115                 120                 125

Ala Ser Ile Val Phe Trp Lys Pro Thr Gly Trp Gly Trp Asn Asp Val
    130                 135                 140

Ile Cys Glu Thr Arg Arg Asn Ser Ile Cys Glu Met Asn Lys Ile Tyr
145                 150                 155                 160
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Leu

<210> 56
<400> 56
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<210> 57
<400> 57
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<210> 58
<400> 58
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<210> 59
<400> 59
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<210> 60
<211> 209
<212> PRT
<213> Mus sp.

<400> 60

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Met Val Gln Glu Arg Gln Ser Gln Gly Lys Gly Val Cys Trp Thr Leu
  1               5                  10                  15

Arg Leu Trp Ser Ala Ala Val Ile Ser Met Leu Leu Leu Ser Thr Cys
             20                  25                  30

Phe Ile Ala Ser Cys Val Val Thr Tyr Gln Phe Ile Met Asp Gln Pro
         35                  40                  45

Ser Arg Arg Leu Tyr Glu Leu His Thr Tyr His Ser Ser Leu Thr Cys
     50                  55                  60

Phe Ser Glu Gly Thr Met Val Ser Glu Lys Met Trp Gly Cys Cys Pro
 65                  70                  75                  80

Asn His Trp Lys Ser Phe Gly Ser Ser Cys Tyr Leu Ile Ser Thr Lys
                 85                  90                  95
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Glu Asn Phe Trp Ser Thr Ser Glu Gln Asn Cys Val Gln Met Gly Ala
100 105 110

His Leu Val Val Ile Asn Thr Glu Ala Glu Gln Asn Phe Ile Thr Gln
115 120 125

Gln Leu Asn Glu Ser Leu Ser Tyr Phe Leu Gly Leu Ser Asp Pro Gln
130 135 140

Gly Asn Gly Lys Trp Gln Trp Ile Asp Asp Thr Pro Phe Ser Gln Asn
145 150 155 160

Val Arg Phe Trp His Pro His Glu Pro Asn Leu Pro Glu Glu Arg Cys
165 170 175

Val Ser Ile Val Tyr Trp Asn Pro Ser Lys Trp Gly Trp Asn Asp Val
180 185 190

Phe Cys Asp Ser Lys His Asn Ser Ile Cys Glu Met Lys Lys Ile Tyr
195 200 205

Leu

<210> 61
<211> 821
<212> DNA
<213> Mus sp.

<400> 61
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aaatgaanaa gattacctat gaatgcctgt tattcttaat a 821

<210> 62

<211> 534
<212> DNA
<213> Mus sp.

<400> 62
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taccaattta ttatggacca gcccagtaga agactatatg aacttcacac ataccattcc 180
agtctcacct gcttcagtga agggactatg gtgtcagaaa aaatgtgggg atgctgccca 240
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agcaccagtg agcagaactg tgttcagatg ggggctcatc tggtggtgat caatactgaa 360
gcggagcaga atttcatcac ccagcagctg aatgagtcac tttcttactt cctgggtctt 420
tcggatccca aggtaatggc aaatggcaat ggatcgatga tactcctttc agtcaaaatg 480
tcaggttctg gcacccccat gaacccaatc ttccagaaga gcggtgtgtt tcaa 534

<210> 63
<211> 178
<212> PRT
<213> Mus sp.

<400> 63
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Arg Leu Trp Ser Ala Ala Val Ile Ser Met Leu Leu Leu Ser Thr Cys
20 25 30

Phe Ile Ala Ser Cys Val Val Thr Tyr Gln Phe Ile Met Asp Gln Pro
35 40 45

Ser Arg Arg Leu Tyr Glu Leu His Thr Tyr His Ser Ser Leu Thr Cys
50 55 60

Phe Ser Glu Gly Thr Met Val Ser Glu Lys Met Trp Gly Cys Cys Pro
65 70 75 80

Asn His Trp Lys Ser Phe Gly Ser Ser Cys Tyr Leu Ile Ser Thr Lys
85 90 95

Glu Asn Phe Trp Ser Thr Ser Glu Gln Asn Cys Val Gln Met Gly Ala
100 105 110

His Leu Val Val Ile Asn Thr Glu Ala Glu Gln Asn Phe Ile Thr Gln
115 120 125

Gln Leu Asn Glu Ser Leu Ser Tyr Phe Leu Gly Leu Ser Asp Pro Lys
130 135 140

Val Met Ala Asn Gly Asn Gly Ser Met Ile Leu Leu Ser Val Lys Met
145 150 155 160

Ser Gly Ser Gly Thr Pro Met Asn Pro Ile Phe Gln Lys Ser Gly Val
165 170 175

Phe Gln

<210> 64
<211> 48
<212> PRT
<213> Mus sp.

<400> 64
Met Val Gln Glu Arg Gln Ser Gln Gly Lys Gly Val Cys Trp Thr Leu
1 5 10 15

Arg Leu Trp Ser Ala Ala Val Ile Ser Met Leu Leu Leu Ser Thr Cys
20 25 30

Phe Ile Ala Ser Cys Val Val Thr Tyr Gln Phe Ile Met Asp Gln Pro
35 40 45

<210> 65
<211> 130
<212> PRT
<213> Mus sp.

<400> 65
Ser Arg Arg Leu Tyr Glu Leu His Thr Tyr His Ser Ser Leu Thr Cys
1 5 10 15

Phe Ser Glu Gly Thr Met Val Ser Glu Lys Met Trp Gly Cys Cys Pro
20 25 30

Asn His Trp Lys Ser Phe Gly Ser Ser Cys Tyr Leu Ile Ser Thr Lys
35 40 45

Glu Asn Phe Trp Ser Thr Ser Glu Gln Asn Cys Val Gln Met Gly Ala
50 55 60

His Leu Val Val Ile Asn Thr Glu Ala Glu Gln Asn Phe Ile Thr Gln
65 70 75 80

Gln Leu Asn Glu Ser Leu Ser Tyr Phe Leu Gly Leu Ser Asp Pro Lys
85 90 95

Val Met Ala Asn Gly Asn Gly Ser Met Ile Leu Leu Ser Val Lys Met
100 105 110

Ser Gly Ser Gly Thr Pro Met Asn Pro Ile Phe Gln Lys Ser Gly Val
115 120 125

Phe Gln
130

<210> 66
<400> 66
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<210> 67
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<210> 68
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<210> 69
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<210> 70
<400> 70
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<210> 71
<211> 1252
<212> DNA
<213> Mus sp.

<400> 71
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<212> DNA
<213> Mus sp.

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Val Ala Leu Cys Tyr Ser Thr Arg Pro Thr His Arg Leu Glu Ala Arg
        35                  40                  45

Gly Leu Glu Thr Arg Pro Ser Glu Arg Ala Leu Ala Ala Leu Ala Val
    50                  55                  60

Ala Leu Ile Leu Glu Ser Glu Arg Met Glu Thr Leu Glu Leu Glu Leu
65                  70                  75                  80

Glu Ser Glu Arg Thr His Arg Cys Tyr Ser Pro His Glu Ile Leu Glu
                85                  90                  95

Ala Leu Ala Ser Glu Arg Cys Tyr Ser Val Ala Leu Val Ala Leu Thr
            100                 105                 110

His Arg Thr Tyr Arg Gly Leu Asn Pro His Glu Ile Leu Glu Met Glu
        115                 120                 125

Thr Ala Ser Pro Gly Leu Asn Pro Arg Ser Glu Arg Ala Arg Gly Ala
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Arg Gly Leu Glu Thr Tyr Arg Gly Leu Leu Glu His Ile Ser Thr His
145                 150                 155                 160

Arg Thr Tyr Arg His Ile Ser Ser Glu Arg Ser Glu Arg Leu Glu Thr
                165                 170                 175

His Arg Cys Tyr Ser Pro His Glu Ser Glu Arg Gly Leu Gly Leu Tyr
            180                 185                 190

Thr His Arg Met Glu Thr Val Ala Leu Ser Glu Arg Gly Leu Leu Tyr
        195                 200                 205

Ser Met Glu Thr Thr Arg Pro Gly Leu Tyr Cys Tyr Ser Cys Tyr Ser
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Pro Arg Ala Ser Asn His Ile Ser Thr Arg Pro Leu Tyr Ser Ser Glu
225                 230                 235                 240

Arg Pro His Glu Gly Leu Tyr Ser Glu Arg Ser Glu Arg Cys Tyr Ser
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Thr Tyr Arg Leu Glu Ile Leu Glu Ser Glu Arg Thr His Arg Leu Tyr
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260 265 270

Ser Gly Leu Ala Ser Asn Pro His Glu Thr Arg Pro Ser Glu Arg Thr
275 280 285

His Arg Ser Glu Arg Gly Leu Gly Leu Asn Ala Ser Asn Cys Tyr Ser
290 295 300

Val Ala Leu Gly Leu Asn Met Glu Thr Gly Leu Tyr Ala Leu Ala His
305 310 315 320

Ile Ser Leu Glu Val Ala Leu Val Ala Leu Ile Leu Glu Ala Ser Asn
325 330 335

Thr His Arg Gly Leu Ala Leu Ala Gly Leu Gly Leu Asn Ala Ser Asn
340 345 350

Pro His Glu Ile Leu Glu Thr His Arg Gly Leu Asn Gly Leu Asn Leu
355 360 365

Glu Ala Ser Asn Gly Leu Ser Glu Arg Leu Glu Ser Glu Arg Thr Tyr
370 375 380

Arg Pro His Glu Leu Glu Gly Leu Tyr Leu Glu Ser Glu Arg Ala Ser
385 390 395 400

Pro Pro Arg Gly Leu Asn Gly Leu Tyr Ala Ser Asn Gly Leu Tyr Leu
405 410 415

Tyr Ser Thr Arg Pro Gly Leu Asn Thr Arg Pro Ile Leu Glu Ala Ser
420 425 430

Pro Ala Ser Pro Thr His Arg Pro Arg Pro His Glu Ser Glu Arg Gly
435 440 445

Leu Asn Ala Ser Asn Val Ala Leu Ala Arg Gly Pro His Glu Thr Arg
450 455 460

Pro His Ile Ser Pro Arg His Ile Ser Gly Leu Pro Arg Ala Ser Asn
465 470 475 480

Leu Glu Pro Arg Gly Leu Gly Leu Ala Arg Gly Cys Tyr Ser Val Ala
485 490 495

Leu Ser Glu Arg Ile Leu Glu Val Ala Leu Thr Tyr Arg Thr Arg Pro
500 505 510

Ala Ser Asn Pro Arg Ser Glu Arg Leu Tyr Ser Thr Arg Pro Gly Leu

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        515                 520                 525

Tyr Thr Arg Pro Ala Ser Asn Ala Ser Pro Val Ala Leu Pro His Glu
    530                 535                 540

Cys Tyr Ser Ala Ser Pro Ser Glu Arg Leu Tyr Ser His Ile Ser Ala
545                 550                 555                 560

Ser Asn Ser Glu Arg Ile Leu Glu Cys Tyr Ser Gly Leu Met Glu Thr
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Leu Tyr Ser Leu Tyr Ser Ile Leu Glu Thr Tyr Arg Leu Glu
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Pro Gly Gln Asp Ser Asn Leu Trp Ala Cys Asp Asp Ile Ile Ser Asn
35 40 45

Arg Glu Trp Glu Arg Met Leu Ala Ser Gln Val Leu Lys Cys Pro Gly
50 55 60

Gly Glu Glu Lys Gly Arg His Glu Lys Glu Thr Met Lys Lys Met Gly
65 70 75 80

Glu Gly Glu Ile Val
85

<210> 84
<211> 23
<212> PRT
<213> Homo sapiens

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Trp Ala Phe Ile Trp Gly Gly
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<211> 62
<212> PRT
<213> Homo sapiens

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20 25 30

Ala Ser Gln Val Leu Lys Cys Pro Gly Gly Glu Glu Lys Gly Arg His
35 40 45

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Glu Lys Glu Thr Met Lys Lys Met Gly Glu Gly Glu Ile Val
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